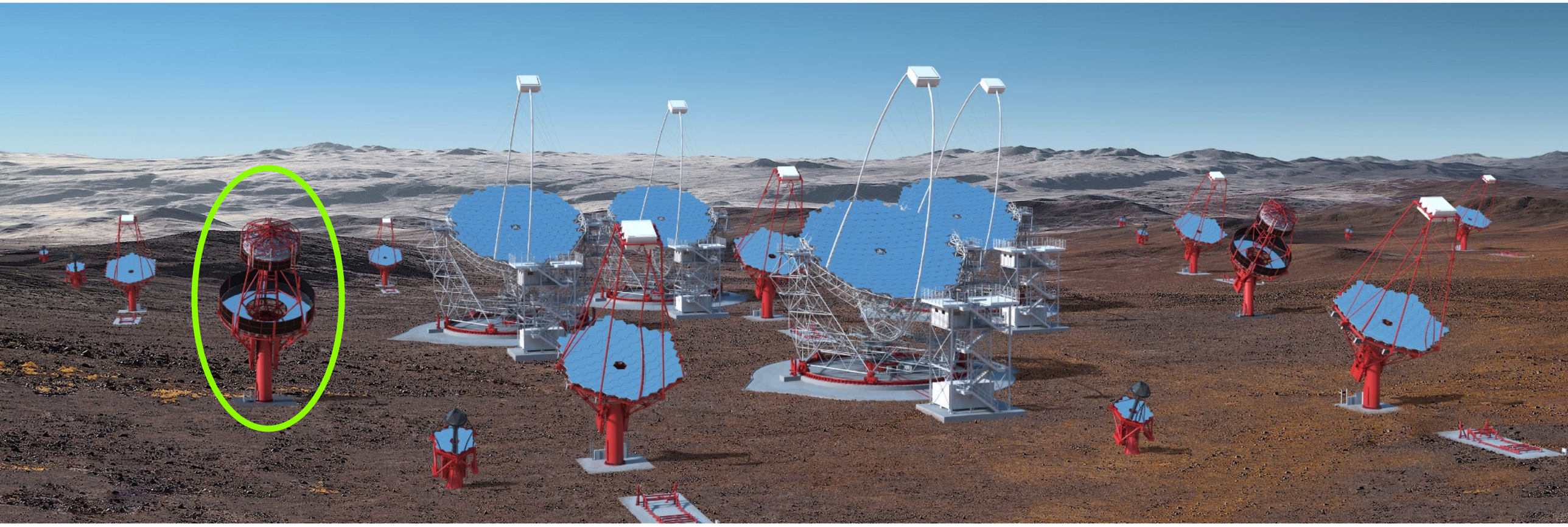
CTA: The Cherenkov Telescope Array

Gamma rays from the universe → fundamental physics and cosmology

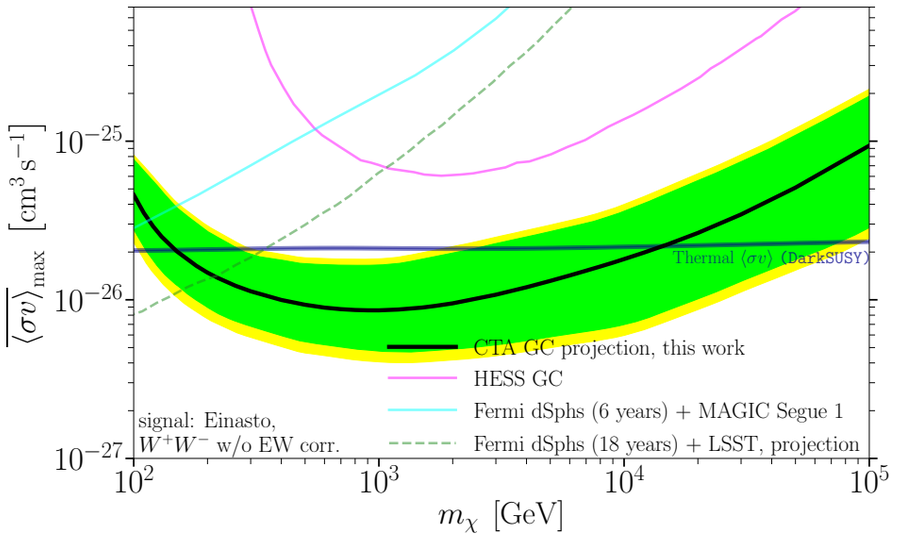


- Dark Matter
- Axion-Like Particles
- Primordial Black Holes
- Lorentz Invariance Violation
- Cosmic IR/Optical Background
- Intergalactic Magnetic Field

CTA dark matter: arXiv: 2007.16129

CTA fundamental physics and cosmology: arXiv: 2010.01349

Justin's Talk about CTA at P5



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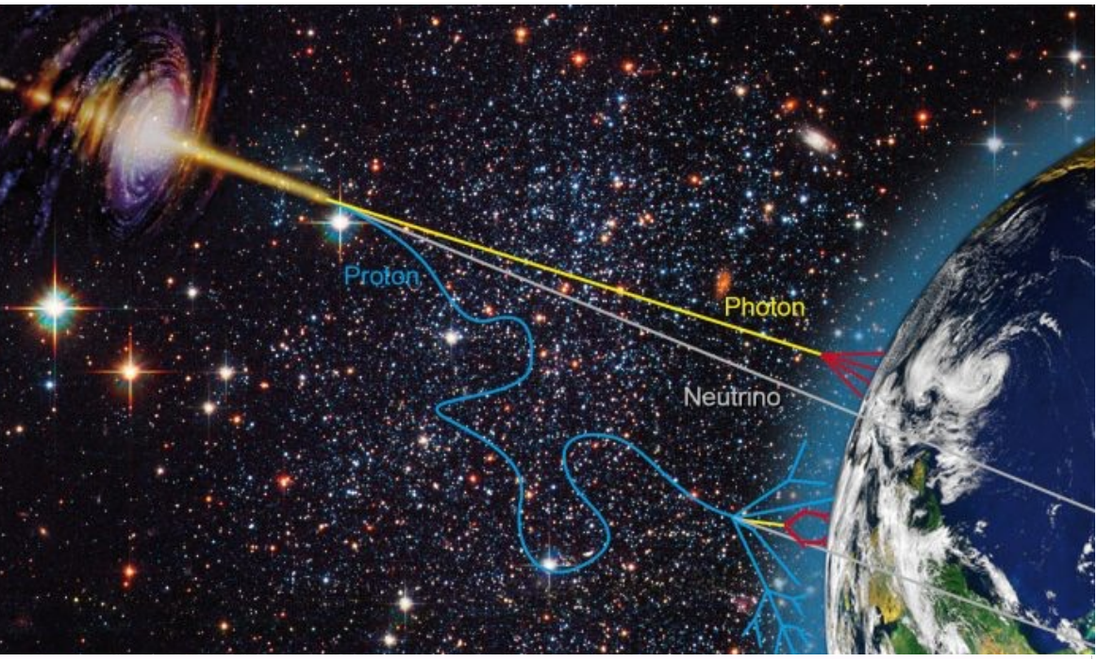
With support from: NSF

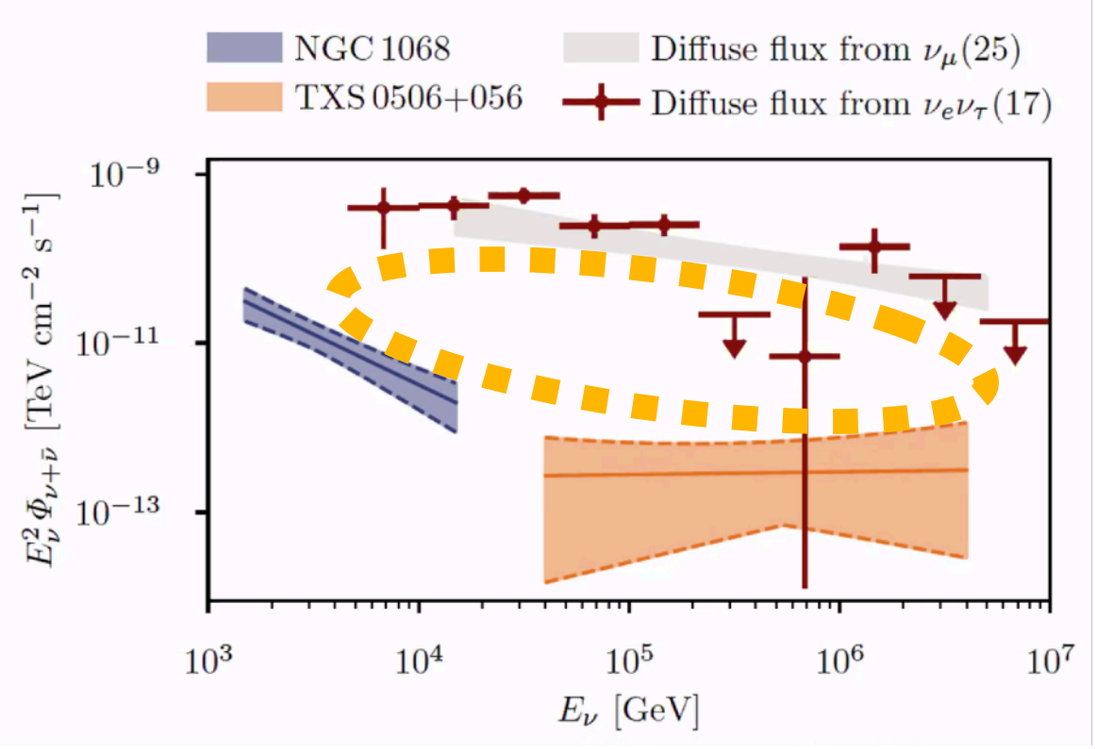
CTA & IceCube (Gen2)

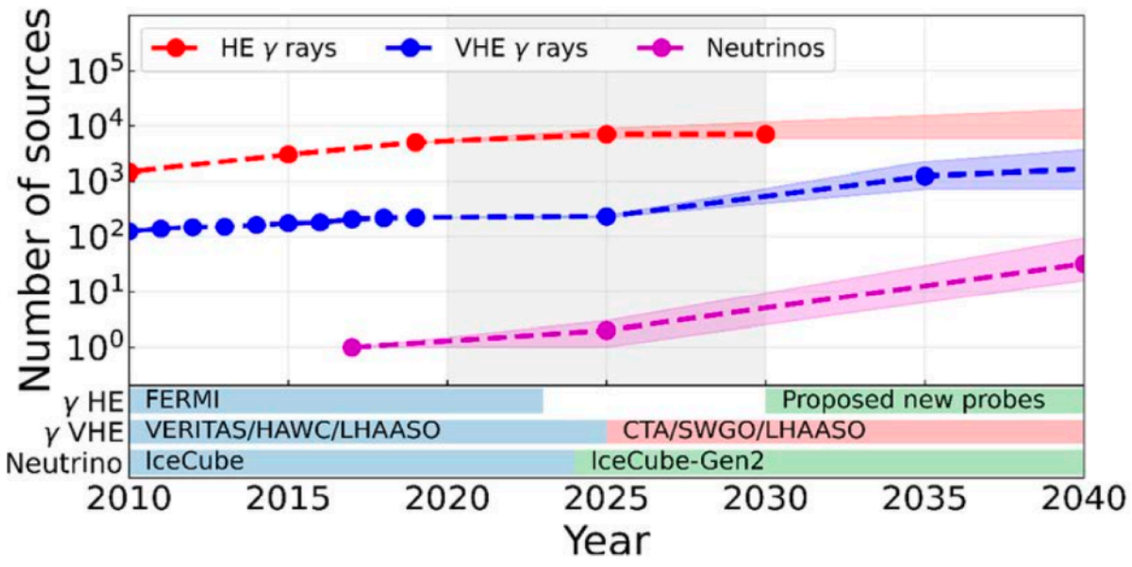
the prospects of multi-messenger astrophysics with next-generation gamma-ray and neutrino observatories



- Neutral messengers for extreme cosmic accelerators.
- Gamma rays must be produced together with neutrinos.
- The brightest neutrino sources ≠ the brightest gamma-ray sources
  - Need to understand the extreme environments in sources.

CTA uniqueness: Transient discovery potential, angular resolution, energy coverage/resolution.





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